APPLICATIONS BEING PREPARED

Philip Morris Incorporated
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**622
:T FIBRILLAR CARBONIZED SMOKING ARTICLE/5-15-73
:I N. RAINER AND D. FULL
:C SMOKING SUBSTITUTE MATERIALS + CORE MATERIAL
:D R&D/TOBACCO MATERIALS DEVELOPMENT DIVISION/MODIFIED SMOKING
:D MATERIALS/GANNON/BURNS

:A A MODIFIED SMOKING PRODUCT IS PROVIDED THAT COMPRISES A GAS
:A PERMEABLE, SELF-SUPPORTING CENTRAL CORE OF A CARBONIZED MATERIAL
:A SURROUNDED AND ENVELOPED BY TOBACCO SHREDS AS COMMONLY USED AS
:A FILLER IN CIGARETTES. THE CARBONIZED CORE HAS A DIAMETER OF
:A ABOUT 3 TO 6 MM AND IS PREPARED FROM A MULTIFILAMENT STRAND OF A
:A FIBROUS CELLULOSIC SUBSTANCE, THE INDIVIDUAL FIBERS OF WHICH HAVE
:A A DIAMETER SMALLER THAN ABOUT 0.2 MM. THE RESULTING SMOKING
:A PRODUCT IS USEFUL IN THE SAME MANNER AS A CONVENTIONAL CIGARETTE
:A OR LIKE PRODUCT BUT PROVIDES A REDUCTION IN THE DELIVERY OF
:A PARTICULATE MATTER RESULTING FROM SMOKING THE PRODUCT AND HAS
:A THE ADDITIONAL ADVANTAGE OF AFFORDING A LOWER COST OF
:A CIGARETTE FABRICATION.

:S WLKT (KOTHE)/GEI/9-30-77 DISCLOSURE SENT TO WLKT WITH PROMISE
:S OF ADDITIONAL EXAMPLES; 11-15-77 PERTINENT REFERENCES SENT
:S TO WLKT; 2-14-78 WLKT INSTRUCTED TO PROCEED WITH PREPARATION
:S OF APPLICATION

100515917

**636
:T FILLING POWER INCREASE OF SMOKING MATERIAL/3-26-74
:I A. LENDVAY
:C EXPANSION + OTHER CHEMICAL + STIFFENING
:D R&D/TOBACCO MATERIALS DEVELOPMENT DIVISION/MODIFIED SMOKING
:D MATERIALS/GANNON/BURNS

:A THROUGH INTERACTION WITH THE PECTINACEOUS MATERIALS OF TOBACCO
:A SMOKING PRODUCTS, INCREASED FILLING POWER OR REDUCED BULK
:A DENSITY IS ACCOMPLISHED, IN ACCORDANCE WITH THE PRESENT
:A INVENTION, BY MEANS OF THE APPLICATION TO THE TOBACCO PRODUCTS
:A OF A SALT SOLUTION OF A MULTIVALENT METAL OR OF A SALT SOLUTION
:A OF A MULTIVALENT ACID, ESPECIALLY THOSE FOUND IN THE HYDRATED
:A FORM AND THOSE HAVING A LARGE MOLECULAR STRUCTURE.

:S WLKT (PLANTZ)/GEI/1-19-78 DRAFT APPLICATION RECEIVED--TO INVENTOR
:S FOR REVIEW

**641 :T NONTOBACCO SMOKING MATERIALS/7-26-74
:I G. KERITSIS
:C SMOKING SUBSTITUTE MATERIALS
:D R&D/TOBACCO MATERIALS DEVELOPMENT DIVISION/MODIFIED SMOKING
:D MATERIALS/GANNON/BURNS

:A A VARIETY OF FORMULATIONS FOR NONTOBACCO SMOKING MATERIALS
:A IS DISCLOSED. THEY ARE CHARACTERIZED IN GIVING ACCEPTABLE
:A SMOKE FLAVOR WITH LOW "TAR" DELIVERY.

:S WLKT (REINISCH)/GEI/1-25-78 CORRECTIONS FOR THIRD DRAFT SENT
:S TO WLKT; ACKNOWLEDGED BY WLKT 1-30-78

**653 :T EXTRUSION OF SMOKING MATERIALS/11-4-74
:I G. KERITSIS
:C SMOKING SUBSTITUTE MATERIALS + EXTRUDE
:D R&D/TOBACCO MATERIALS DEVELOPMENT DIVISION/MODIFIED SMOKING
:D MATERIALS/GANNON/BURNS

:A ANY OF A WIDE VARIETY OF EXTRUSION OR OTHER FORMING TECHNIQUES
:A PRESENTLY IN USE WITH RESINS CAN BE USED TO FORM SHEET OR
:A FIBROUS PRODUCTS FROM SYNTHETIC SMOKING MATERIALS BASED ON
:A RESINS. SUITABLE FOR USE AS SUPPLEMENT TO OTHER KERITSIS CASES.

:S WLKT (REINISCH)/GEI/COMBINED WITH PM 641

1005115918

**662 :T INCORPORATION OF HEAT-TREATED CARBOHYDRATE IN RCB BLEND MATRIX
:T 1-16-75
:I R. SELIGMAN AND G. KERITSIS
:C RECONSTITUTED + EXTENDERS
:D R&D/TOBACCO MATERIALS DEVELOPMENT DIVISION/MODIFIED SMOKING
:D MATERIALS/GANNON/BURNS

:A HEAT-TREATED CARBOHYDRATE IS INCORPORATED INTO AN RCB MATRIX
:A PRIOR TO CASTING TO PRODUCE A SHEET WITH A LOWERED TAR AND
:A NICOTINE SMOKE.

:S WLKT (REINISCH)/GEI/12-9-77 THIRD DRAFT APPLICATION RECEIVED--
:S TO INVENTORS FOR REVIEW; 1-30-78 INVENTORS' COMMENTS RECEIVED

**682 :T EXPANSION OF TOBACCO WITH CARBON DIOXIDE HYDRATE/6-2-75
:I J. KNIGHT
:C EXPANSION + CO2
:D MANUFACTURING CENTER/MISCELLANEOUS AND R&D/APPLIED RESEARCH
:D FARONE (BECAUSE OF HOELZEL'S INVOLVEMENT)

:A FORMATION OF CARBON DIOXIDE HYDRATE AS THE AGENT WITHIN TOBACCO
:A FOR SUBSEQUENT RELEASE OF GAS FOR PUFFING PERMITS OPERATION
:A AT LOWER PRESSURES THAN WITH LIQUID CO2.

:S WLKT (KOTHE)/GEI/CASE INDICATED AS HAVING SOME PRIORITY; 1-20-78
:S FIRST DRAFT RETURNED TO WLKT WITH CORRECTIONS; 1-27-78 INVENTOR-
:S SHIP DISCUSSED WITH INSKEEP, PALMER, FARONE, HOELZEL

**683 :T PROCESS FOR INCREASING THE FILLING CAPACITY OF TOBACCO/6-5-75
:I S. DEBRAND
:C EXPANSION + HEAT + STIFFENING
:D R&D/APPLIED RESEARCH/FARONE

:A THIS INVENTION RELATES TO AN INCREASE IN FILLING VALUE (F.V.)
:A OF VARIOUS GRADES OF TOBACCO SHREDS FROM FLUE-CURED AND BURLEY
:A TOBACCOS AFTER THEY WERE SUBJECTED TO A STEAM-AIR TREATMENT.
:A THE OBSERVED INCREASE IN FILLING CAPACITY HAS BEEN ATTRIBUTED
:A TO STRUCTURAL CHANGES IN THE WATER-INSOLUBLE TOBACCO CARBOHY-
:A DRATES AND THE SHIFT IN EQUILIBRIUM MOISTURE CONTENT WHICH
:A HAVE RESULTED IN A STIFFENING OF THE FIBERS. THE INCREASE IN
:A FILLING VALUE HAS BEEN DETERMINED AS 10% TO 20% AS COMPARED
:A WITH UNTREATED TOBACCO MAINTAINED UNDER STANDARD CONDITIONS.

:S WLKT (KOTHE)/GEI/8-22-75 DISCLOSURE SENT TO WLKT; NO DRAFT
:S RECEIVED IN 9 REPORT INTERVALS

**689 :T CROSS-LINKED SMOKING MATERIAL/7-22-75
:I G. KERITSIS
:C TOBACCO TREATMENT + ADDITIVE
:D R&D/TOBACCO MATERIALS DEVELOPMENT DIVISION/MODIFIED SMOKING
:D MATERIALS/GANNON/BURNS

:A TO STRENGTHEN AND REDUCE BREAKAGE OF SMOKING MATERIALS,
:A ESPECIALLY FOAMED OR EXPANDED, TREAT WITH POLYFUNCTIONAL
:A HYDROXY OR AMINO COMPOUNDS AND POLYCARBOXYLIC ACIDS, ETC.

:S WLKT (REINISCH)/GEI/COMBINED WITH PM 641

**690 :T CARBONIZATION OF TOBACCO PRODUCTS/8-1-75
:I A. LENDVAY AND H. WAKEHAM
:C RECONSTITUTED + EXTENDERS + HEAT
:D R&D/TOBACCO MATERIALS DEVELOPMENT DIVISION/MODIFIED SMOKING
:D MATERIALS/GANNON/BURNS

:A TOBACCO STEM AND/OR STALK MATERIALS WERE THERMALLY TREATED, PUL-
:A VERIZED, AND ADDED TO A CONVENTIONAL RECONSTITUTED TOBACCO SHEET
:A IN A MANNER SUCH THAT THE RESULTING CIGARETTE FORMED FROM THE
:A FILLER THUS FABRICATED HAD REDUCED DELIVERY OF TOTAL PARTICULATE
:A MATTER IN THE SMOKE AND HAD NO "STEM TASTE" AS IS USUAL WHEN
:A STEM AND STALK MATERIALS HAVE BEEN USED IN TOBACCO SMOKING
:A PRODUCTS.

:S WLKT (REINISCH)GEI/19-9-77 FIRST DRAFT RECEIVED--TO INVENTORS
:S FOR REVIEW

**695 :T UPGRADING TOBACCO STEM MATERIALS/9-22-75
:I A. LENDVAY
:C TOBACCO TREATMENT + HEAT + RECONSTITUTED + EXTENDERS
:D R&D/TOBACCO MATERIALS DEVELOPMENT DIVISION/MODIFIED SMOKING
:D MATERIALS/GANNON/BURNS

:A TOBACCO STEM MATERIAL (PARTICULARLY THAT FROM BURLEY TOBACCO)
:A WAS HEAT TREATED, EITHER BEFORE OR AFTER HAVING BEEN EXTRACTED.
:A THE PH, TEMPERATURE AND LENGTH OF EXPOSURE VARIED ACCORDING
:A TO THE MODE OF EXTRACTION AND THE INTENDED USE OF THE END
:A PRODUCT. THE HEAT TREATMENT OF THE STEM MATERIAL WAS
:A CARRIED OUT, EITHER ALONE OR AFTER HAVING BEEN INCORPORATED
:A INTO CONVENTIONAL TOBACCO SHEET MATERIAL, AT A TEMPERATURE AND
:A FOR A TIME SUFFICIENT TO ACHIEVE THE PURPOSE OF UPGRADING.
:A THE HEAT TREATMENT CAN BE CARRIED OUT BEFORE OR AFTER COATING
:A THE EXTRACTED MATERIAL WITH CASING. IT WAS FOUND THAT THIS
:A TREATMENT UPGRADED THE MATERIAL TO REMOVE ITS OBJECTIONABLE
:A HARSHNESS AND "STEMMY" TASTE IN A TOBACCO SMOKING PRODUCT. IF
:A THE STEMS WERE TREATED AS DESCRIBED ABOVE, THE UPGRADING WAS
:A SUFFICIENT TO MAKE IT USABLE TO REPLACE STRIP TOBACCO IN THE
:A FILLER BLEND.

:S WLKT (REINISCH)/GEI/6-3-77 REVISED DISCLOSURE SENT TO WLKT;
:S 1-25-78 COPIES OF DISCLOSURES TO INVENTOR; 2-10-78 FOUR
:S ADDITIONAL EXAMPLES SENT TO WLKT

**697 :T CONTINUOUS PROCESS FOR TOBACCO EXPANSION/9-25-75
:I A. LENDVAY AND B. SPANN
:C EXPANSION + OTHER CHEMICAL
:D R&D/TOBACCO MATERIALS DEVELOPMENT DIVISION/MODIFIED SMOKING
:D MATERIALS--TOBACCO PROCESSING/GANNON/BURNS

:A A CONTINUOUS PROCESS OF EXPANDING TOBACCO WITH CARBON DIOXIDE
:A AND AMMONIA BY SPRAYING TOBACCO WITH COLD CONCENTRATED
:A AMMONIUM HYDROXIDE, BLENDING THE SPRAYED TOBACCO ALONE AND
:A THEN MIXING THE BLENDED TOBACCO WITH GROUND DRY ICE, FOLLOWED
:A BY EXPANDING THE TOBACCO BY MEANS OF HEAT AND THEREAFTER
:A EQUILIBRATING THE TOBACCO IS DISCLOSED. CONCENTRATED
:A AQUEOUS SOLUTIONS OF AMMONIUM CARBAMATE MAY BE SUBSTITUTED FOR
:A THE AMMONIUM HYDROXIDE AND DRY ICE IN THE PROCESS. THE TOBACCO
:A MAY BE EXPANDED IN AN ATMOSPHERE OF HOT STEAM OR GAS, OR BY
:A MEANS OF MICROWAVE OR RADIANT HEAT ENERGY. THE PROCESS ALLOWS
:A IMPREGNATION AND EXPANSION OF TOBACCO TO BE EFFECTED WITHOUT
:A INTERRUPTION ON A PRODUCTION LINE.

:S WLKT (GILLIS)/SAH/1-30-78 SECOND DRAFT RECEIVED--TO INVENTOR AND
:S MANAGEMENT FOR REVIEW; COMMENTS RECEIVED WHICH MIGHT NECESSITATE
:S SOME REVISION OF SPECIFICATION

**698 :T A SMOKABLE PRODUCT BASED ON HEAT-TREATED CARBOHYDRATES AND
:T METHOD OF MAKING IT/9-30-75
:I G. KERITSIS
:C SMOKING SUBSTITUTE MATERIALS
:D R&D/TOBACCO MATERIALS DEVELOPMENT DIVISION/MODIFIED SMOKING
:D MATERIALS/GANNON/BURNS

:A CELLULOSE OR ITS DERIVATIVES OR PLANT MATERIAL IS THERMALLY
:A DEGRADED TO A WEIGHT LOSS OF 10 TO 90% AND CAST FROM A SLURRY
:A WITH ADDITIVES OR ADDED TO PAPER.

:S WLKT (REINISCH)/GEI/COMBINED WITH PM 641

1005115921

**711 :T DIAMMONIUM PHOSPHATE ADDED TO TOBACCO FILLER TO RETARD CIGARETTE
:T BURN RATE/11-7-75
:I W. GEISZLER, JR. AND W. HOPKINS
:C TOBACCO TREATMENT + ADDITIVE
:D R&D/NEW CIGARETTE PRODUCTS DIVISION/PAPER AND FILLER MODIFICATION
:D GANNON/MEYER
:S WLKT (KOTHE)/GMJS/SEE ALSO PM 746; PRIORITY CASE; PRIOR ART
:S VERY CLOSE; 1-77 DISCLOSURE HANDED TO KOTHE; NO DRAFT RECEIVED
:S IN 6 REPORT INTERVALS

**712 :T FLAVOR IMPROVEMENT OF RECONSTITUTED TOBACCO PRODUCTS/11-7-75
:I F. DAYLOR, D. KEEL, AND H. SPIELBERG
:C FLAVOR + RECONSTITUTED + ADDITIVE
:D R&D/FLAVOR DEVELOPMENT DIVISION/FLAVOR DEVELOPMENT GROUP/GANNON
:D DAYLOR

:A SPRAY DAP ON RL SHEET OR APPLY IN RECOMBINE LIQUOR.

:S WLKT (KOTHE)/GMJS/SEE ALSO PM 746; PRIORITY CASE; PRIOR ART
:S VERY CLOSE; 1-77 DISCLOSURE HANDED TO KOTHE; NO DRAFT RECEIVED
:S IN 6 REPORT INTERVALS

**713 :T TOBACCO REPLACEMENT MATERIAL/11-12-75
:I G. KERITSIS
:C SMOKING SUBSTITUTE MATERIALS
:D R&D/TOBACCO MATERIALS DEVELOPMENT DIVISION/MODIFIED SMOKING
:D MATERIALS/GANNON/BURNS

:A CHITIN OR CHITOSAN AS BASE FOR SUBSTITUTE SMOKING MATERIAL.

:S WLKT (REINISCH)/GEI/COMBINED WITH PM 641

**719 :T POST-TREATMENT OF HUMIC ACID-DYED PAPER/2-6-76
:C PAPER + STAINING
:D R&D/NEW CIGARETTE PRODUCTS DIVISION/PAPER AND FILTER MODIFICATION
:D GANNON/MEYER

:A HUMIC ACID-DYED PAPER SUITABLE FOR USE AS WRAPPERS FOR SMOKING
:A ARTICLES IS POST TREATED WITH MAGNESIUM SULFATE TO FIX OR RENDER
:A THE HUMIC ACID INSOLUBLE. PAPER TREATED IN THIS MANNER PROVIDES
:A A PRODUCT OF ACCEPTABLE BROWN COLOR; AND ON PYROLYSIS, THE AMOUNT
:A OF CARBON MONOXIDE EVOLVED IS REDUCED OVER THAT OF CURRENTLY
:A AVAILABLE BROWN PAPERS.

:S SAH/1-11-78 DRAFT APPLICATION TO INVENTOR FOR REVIEW; COMMENTS
:S FROM INVENTOR RECEIVED; AWAITING SPECIFIC EXAMPLES FOR INCLUSION
:S IN SPECIFICATION--MAY NECESSITATE ADDITIONAL WORK BY INVENTOR

1005115922

**727/8 :T TOBACCO EXPANSION WITH GASEOUS CO2/4-15-76
:I F. UTSCH, R. DE LA BURDE, P. AUMENT
:C EXPANSION + CO2
:D R&D/TOBACCO MATERIALS DEVELOPMENT DIVISION/TOBACCO PROCESSING
:D GANNON/BURNS

:A AN IMPROVED PROCESS FOR THE EXPANSION OF TOBACCO IS PROVIDED
:A WHICH EMPLOYS CARBON DIOXIDE AS THE EXPANSION AGENT IN A
:A SEQUENCE OF STEPS COMPRISING: (1) CONTACTING TOBACCO WITH
:A CARBON DIOXIDE GAS AT A PRESSURE OF AT LEAST 2250 PSIG FOR
:A A TIME SUFFICIENT TO IMPREGNATE THE TOBACCO WITH THE CARBON
:A DIOXIDE GAS, (2) RELEASING THE PRESSURE AND (3) THEREAFTER
:A SUBJECTING THE CARBON DIOXIDE-TREATED TOBACCO TO RAPID HEATING
:A CONDITIONS TO REMOVE THE CARBON DIOXIDE AND THEREBY EXPAND THE
:A TOBACCO. IN A PREFERRED EMDOBIMENT OF THE PRESENT INVENTION,
:A THE SYSTEM IS COOLED SUFFICIENTLY DURING IMPREGNATION SO THAT
:A AT LEAST A PORTION OF THE CARBON DIOXIDE GAS IS CONDENSED, WHEN
:A THE PRESSURE IS RELEASED IN STEP (2).

:S WLKT/GEI/PRIORITY CASE; ASSOCIATED WITH EARLIER CASES;
:S 1-27-78 REVISED DRAFT RECEIVED--TO INVENTORS FOR REVIEW;
:S 1-30-78 DOCUMENTS RELATING TO INVENTORSHIP SENT TO WLKT; 2-8-78
:S SEARCH OF PM DATA BASE COMPLETED

**733 :T LOW TEMPERATURE STEAM EXPANSION OF AMMONIUM CARBONATE IMPREG-
:T NATED FILLER/5-6-76
:I H. MERRITT AND G. KITE
:C EXPANSION + HEAT + CO2
:D R&D/MISCELLANEOUS/CHEMICAL RESEARCH DIVISION/SYNTHESIS OF
:D TOBACCO ADDITIVES/OSDENE/JOHNSON
:S WLKT (KOTHE)/GEI/12-8-77 DISCLOSURE HANDED TO KOTHE

**734 :T EXPANSION WITH AMMONIUM CARBAMATE/5-6-76
:I F. UTSCH
:C EXPANSION + OTHER CHEMICAL + HEAT
:D R&D/TOBACCO MATERIALS DEVELOPMENT DIVISION/TOBACCO PROCESSING
:D GANNON/BURNS

:A A METHOD FOR IMPREGNATING TOBACCO WITH AMMONIA AND CARBON
:A DIOXIDE PREPARATORY TO HEATING FOR PURPOSES OF EXPANSION.
:A AMMONIUM CARBAMATE POWDER IS MIXED INTIMATELY WITH SHREDDED
:A TOBACCO AND BULKED AT AMBIENT TEMPERATURE FOR A PERIOD OF TIME
:A PRIOR TO A HEATING STEP FOR EXPANDING THE TOBACCO. THE USE OF
:A AMMONIUM CARBAMATE POWDER ALLOWS IMPREGNATION OF THE TOBACCO
:A WITH VOLATILES IN SITU WITHOUT UNDULY HEATING THE TOBACCO.
:A BECAUSE OF THE LACK OF APPRECIABLE EXOTHERMIC HEAT INVOLVED
:A IN BREAKDOWN OF THE AMMONIUM CARBAMATE, ANY FLAVOR LOSS THAT
:A MAY RESULT FROM HEATING FOR EXTENDED PERIODS IS AVOIDED.

:S WLKT (KOTHE)/GMJS/HIGH PRIORITY; 2-3-78 DISCLOSURE SENT TO WLKT

1005115923

**742 ;T TOBACCO-FLAVOR PRECURSORS/6-15-76
;I G. KERITSIS
;C FLAVOR + PYROLYSIS
;D R&D/TOBACCO MATERIALS DEVELOPMENT DIVISION/MODIFIED SMOKING
;D MATERIALS/GANNON/BURNS

;A SMOKING MATERIALS IN GENERAL, WHETHER TOBACCO, RECONSTITUTED
;A TOBACCO, TOBACCO SUBSTITUTES, OR ARTIFICIAL SMOKING MATERIALS
;A ARE GIVEN ENHANCED SMOKE FLAVOR BY THE ADDITION OF CERTAIN NON-
;A VOLATILE MATERIALS WHICH PRODUCE THE FLAVORS ON PYROLYSIS.
;A THESE MATERIALS ARE CHITIN, CHITOSAN, GLUCOSAMINE, OR NATURAL
;A MATERIALS WHICH CONTAIN HIGH PROPORTIONS OF THESE COMPOUNDS.

;S WLKT (KOTHE)/GEI/6-3-77 DISCLOSURE SENT TO WLKT; 6-13-77
;S ADDITIONAL EXAMPLES SENT TO WLKT; NO DRAFT RECEIVED IN 3 REPORT
;S INTERVALS

**744 ;T IMPROVED FLAVOR FROM LOW DELIVERY DILUTED CIGARETTES/7-6-76
;I M. KELLEY, JR.
;C FILTER + IMPACT + VENTILATED
;D R&D/NEW CIGARETTE PRODUCTS DIVISION/NEW PRODUCT DEVELOPMENT
;D GANNON/MEYER

;A DISC BAFFLE DIVERTS SMOKE TO OUTER EDGE OF FILTER TO BETTER MIX
;A WITH DILUTION AIR.

;S GEI/9-8-76 SEARCH COMPLETED; RESULTS TO INVENTOR FOR REVIEW AND
;S DISCUSSION; INTERVIEW WILL BEGIN APPLICATION PREPARATION

**746 ;T DAP ADDED TO TOBACCO FILLER CONTAINING EXPANDED TOBACCO TO
;T RAISE TPM/UNIT WEIGHT/7-27-76
;I W. GEISZLER, JR. AND W. HOPKINS
;C TOBACCO TREATMENT + ADDITIVE
;D R&D/NEW CIGARETTE PRODUCTS DIVISION/PAPER AND FILLER MODIFICATION
;D GANNON/MEYER

;A A METHOD OF CONTROLLING THE TOTAL PARTICULATE MATTER IN CONTENT
;A OF SMOKE FROM PYROLYSIS OF A SMOKING PRODUCT CONTAINING AT LEAST
;A ONE INGREDIENT MADE FROM AN EXPANDED NATURAL PRODUCT. EXPANDED
;A TOBACCO AS AN INGREDIENT OF A SMOKING FILLER MIXTURE IS TREATED
;A WITH DIAMMONIUM PHOSPHATE IN DIFFERENT CONCENTRATIONS TO YIELD
;A DIFFERENT AMOUNTS OF TOTAL PARTICULATE MATTER PER CIGARETTE
;A DELIVERED TO THE SMOKER.

;S WLKT/GMJS/SEE ALSO PM 711; PRIOR ART VERY CLOSE; 1-10-77
;S DISCLOSURE SENT TO WLKT; NO DRAFT RECEIVED IN 6 REPORT INTERVALS

1005115924

**750 :T IMPROVEMENT OF FILLING POWER OF EXPANDED TOBACCO BY HEAT
:T TREATMENT/9-16-76
:I L. SYKES AND H. MERRITT
:C EXPANSION + POST EXPANSION TREATMENT + HEAT
:D R&D/TOBACCO MATERIALS DEVELOPMENT DIVISION/CO2 EXPANSION
:D GANNON/BURNS

:A TOBACCO ALREADY EXPANDED BY A RAPID HEATING PROCESS UNDERGOES
:A FURTHER INCREASE IN (REORDERED) FILLING POWER WHEN IT IS GIVEN
:A AN ADDITIONAL TREATMENT WITH HOT GAS SUCH AS AIR OR STEAM.
:A THIS TREATMENT CAN BE LESS DRASTIC (I.E., AT A LOWER TEMPERA-
:A TURE) THAN THE FIRST EXPANSION STEP, AND THUS CAN BE MORE
:A EASILY CONTROLLED. THE PRODUCT, WHILE HAVING SUBSTANTIALLY
:A INCREASED FILLING POWER, IS EQUALLY ACCEPTABLE IN SUBJECTIVE
:A SMOKING TESTS TO THE PRODUCT WITHOUT POST TREATMENT.

:S WLKT (KOTHE)/GEI/11-17-77 DISCLOSURE SENT TO WLKT

**761 :T MICROWAVE MOISTURE METER/12-8-76
:I T. LASZLO
:C INSTRUMENT + MOISTURE METER
:D R&D/MISCELLANEOUS

:A IMPROVED CONTROL OF CIGARETTE ROD CHARACTERISTICS IS ATTAINED
:A BY INTEGRATION OF ROD MASS, FIRMNESS AND MOISTURE CONTENT CHARAC-
:A TERISTICS IN PROVIDING CONTROL SIGNALS TO TOBACCO FEED APPARATUS.
:A IN A PREFERRED PRACTICE, A SIGNAL PROCESSOR IS PROVIDED WITH
:A INPUT INDICATION OF ROD FIRMNESS, MASS AND MOISTURE CONTENT AND
:A IN TURN CONTROLS THE CUSTOMARY TRIMMER KNIFE AT THE CIGARETTE
:A MAKER INPUT, TOBACCO FEED BEING REGULATED BY A CONTROL SIGNAL
:A HAVING CHARACTERISTICS IN ONE PART DIRECTLY PROPORTIONAL TO
:A FIRMNESS, IN ANOTHER PART DIRECTLY PROPORTIONAL TO MOISTURE
:A CONTENT AND IN A FURTHER PART BOTH DIRECTLY PROPORTIONAL TO
:A MOISTURE CONTENT AND INVERSELY PROPORTIONAL TO MASS.

:S WLKT (DALEY)/GMJS/11-2-77 FIRST DRAFT APPLICATION RECEIVED--
:S TO INVENTOR FOR REVIEW

**763 :T ZIP TAPE SEPARATOR/1-4-77
:I R. THATCHER
:C MECHANICAL SEPARATOR
:D MANUFACTURING ENGINEERING/PASQUINE

:A SEPARATES PULL TAPES FROM FILLER RECLAIMED BY CARTON RIPPER/
:A RECLAIM PROCESS.

:S WLKT (DALEY)/GMJS/EARLY 1977 DISCLOSURE SENT TO WLKT;
:S APPLICATION NOW BEING PREPARED; NO DRAFT RECEIVED IN 6 REPORT
:S INTERVALS

**765 :T PACKAGE BLANK MEASURING INSTRUMENT/1-19-77
:I J. BOWLING
:C INSTRUMENT + PACKAGING
:D MANUFACTURING ENGINEERING/PASQUINE

:A ACCURATELY MEASURES CUT AND SCORE LOCATIONS OF FLAT PACKAGE
:A BLANKS.

:S WLKT (BRANDT)/GMJS/9-15-77 DISCLOSURE SENT TO WLKT; AWAITING
:S SEARCH REPORT FROM WLKT

**766 :T METHOD OF FEEDING MASSED COHERENT MATERIAL/2-3-77
:I T. LASZLO (RETIRED)
:C MECHANICAL
:D MISCELLANEOUS

:A A METHOD OF FEEDING PARTICULATE OR FIBROUS MASSES THAT ARE
:A COHERENT IN NATURE. A FEED ROLLER, WHICH IS MADE WITH EVENLY
:A SPACED PROJECTIONS OF PYRAMID SHAPE, IS POSITIONED AT A FEED
:A SITE WHERE BRIDGING OF THE MASS OF MATERIAL IS FOUND TO HINDER
:A THE FLOW OF MATERIAL THROUGH, INTO, OR OUT OF A CONVEYOR OR A
:A DUCT OPENING. THE SURFACE OF THE FEED ROLLER IS POSITIONED
:A IN CONTACT WITH THE MASS SO THAT AS THE ROLLER IS TURNED A
:A GIVEN ANGULAR DISTANCE THE PYRAMIDAL PROJECTIONS ENTER
:A THE INTERSTICES OF THE BRIDGED MATERIAL, MOVE A PORTION OF IT
:A IN THE DIRECTION OF ROTATION THUS MOVING IT TO FALL INTO A
:A DUCT AND/OR ONTO A CONVEYOR.

:S GMJS/2-6-78 THIRD DRAFT COMPLETED--TO INVENTOR FOR REVIEW

**769 :T METHOD FOR MAKING WRAPLESS CIGARETTE FILTERS/2-15-77
:I W. NICHOLS AND D. LASLIE
:C FILTER + METHOD
:D R&D/NEW CIGARETTE PRODUCTS DIVISION/FILTER AND CIGARETTE
:D PROCESS DEVELOPMENT/GANNON/BURNS

:A MICROWAVE FORMING OF WRAPLESS PLUGS, AS IN PM 735, BUT WITH
:A PLASTICIZER REPLACED BY SLIGHTLY VOLATILE "ACTIVATOR" SUCH AS
:A GLYCOLS, GLYCEROL.

:S WLKT/GMJS/APPLICATION BEING PREPARED; AWAITING FURTHER
:S INFORMATION

1005115926

**773 :T CO2 IMPREGNATION OF FILLER BY RAPID COOLING/4-25-77
:I R. DE LA BURDE, P. AUMENT, AND F. UTSCH
:C EXPANSION + CO2
:D R&D/TOBACCO MATERIALS DEVELOPMENT DIVISION/TOBACCO PROCESSING
:D GANNON/BURNS

:A TOBACCO (CUT FILLER) IS PREPARED FOR SUBSEQUENT EXPANSION TREAT-
:A MENT, AS BY RAPID HEATING, BY IMPREGNATION WITH GASEOUS CARBON
:A DIOXIDE AT RELATIVELY LOW PRESSURES, SUCH AS 300 PSIG OR LOWER,
:A AND RAPID COOLING TO SUCH TEMPERATURE THAT THE GAS IS CONDENSED
:A AND SOLIDIFIED WITHIN THE TOBACCO. PRESSURE IS RELEASED, AND
:A THE MATERIAL IS EXPANDED IN A CONVENTIONAL WAY.

:S WLKT/GEI/11-77 DISCLOSURE SENT TO WLKT

**774 :T EXPANDED, STIFFENED TOBACCO/4-30-77
:I N. RAINER AND D. SIWIEC
:C EXPANSION + OTHER CHEMICAL + STIFFENING
:D R&D/TOBACCO MATERIALS DEVELOPMENT DIVISION/MODIFIED SMOKING
:D MATERIALS/GANNON/BURNS

:A TOBACCO STEMS, PREFERABLY BURLEY, ARE TREATED WITH A
:A CONCENTRATED AQUEOUS SOLUTION OF A DIVALENT SALT OF A METAL
:A SUCH AS CALCIUM, MAGNESIUM, ZINC, OR ALUMINUM. THE CHLORIDE,
:A ACETATE, OR NITRATE SALTS OR SAID METALS ARE ACCEPTABLE. THE
:A SALT IMPREGNATED STEMS ARE THEN TREATED WITH A CONCENTRATED
:A SOLUTION OF HYDROGEN PEROXIDE AND AMMONIA FOLLOWED BY WASHING
:A AND DRYING. STEMS TREATED ACCORDING TO THIS PROCESS MAINTAIN
:A THEIR EXPANDED STATE AND HAVE SIGNIFICANTLY INCREASED FILLING
:A CAPACITY: FOR EXAMPLE, 150-170 CC OF FILLING VOLUME PER 10
:A GRAMS OF COMBUSTIBLE MATERIAL VERSUS ABOUT 35 CC PER 10 GRAMS FOR
:A UNTREATED STEMS.

:S SAH/APPLICATION BEING PREPARED; 10-77 SEARCH COMPLETED

**775 :T EXPANSION AND/OR FLAVOR ADDITION BY CO2 LIQUID/5-10-77
:I R. DE LA BURDE AND P. AUMENT
:C EXPANSION + CO2
:D R&D/TOBACCO MATERIALS DEVELOPMENT DIVISION/TOBACCO PROCESSING
:D GANNON/BURNS
:S WLKT (KOTHE)/GEI/8-17-77 DISCLOSURE SENT TO WLKT; NO DRAFT
:S RECEIVED AFTER 3 REPORT INTERVALS

**776 :T AIR PERFORATION/5-11-77
:I W. MUTTER
:C PAPER + PERFORATING + TIPPING + ROD
:D R&D/ENGINEERING SERVICES DIVISION/THOMSON/MUTTER
:S WLKT (DALEY)/GMJS/10-29-77 SEARCH COMPLETED; AWAITING MACHINE
:S CONSTRUCTION DETAILS

**778 :T AERODYNAMIC-VIBRATORY SEPARATOR/5-17-77
:I R. THATCHER AND H. ODOM
:C MECHANICAL + SEPARATOR
:D MANUFACTURING ENGINEERING/PASQUINE
:A METHOD AND APPARATUS FOR PROCESSING MIXED PARTICULATE MATTER
:A CONTAINING MATERIALS OF DIFFERENT DENSITY INTO SEPARATE STREAMS
:A OF LIKE DENSITY MATERIALS.
:S WLKT (BRANDT)/GMJS/APPLICATION BEING PREPARED

**779 :T MEANS TO MEASURE TOBACCO FIRMNESS ON CIGARETTE MAKER/5-25-77
:I J. OSMALOV
:C INSTRUMENT + FIRMNESS OF ROD
:D R&D/TOBACCO SERVICES DIVISION/GANNON/OSMALOV
:S WLKT/GMJS

**781 :T CARBON DIOXIDE EXPANSION VIA DRY ICE--GAS IMPREGNATION/6-27-77
:I H. MERRITT
:C EXPANSION + CO2
:D R&D/MISCELLANEOUS
:S WLKT (KOTHE)/GEI/12-7-77 DISCLOSURE SENT TO WLKT

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**782 :T TORUS FAN CIGARETTE RIPPER WITH AERO DYNAMIC VIBRATORY SCREEN
:T SEPARATOR/7-14-77
:I R. THATCHER AND H. ODOM
:C MECHANICAL + SEPARATOR
:D MANUFACTURING ENGINEERING/PASQUINE

:A A MULTIPLE STAGE SYSTEM FOR SALVAGING TOBACCO FILLER FROM
:A REJECTED CIGARETTES. THE ADVANCED FEATURES RESULT IN AN
:A EXCELLENCE OF SEPARATION CAPABILITY FOR REMOVING PAPER AND FILTER
:A PLUGS FROM THE TOBACCO FILLER. A DRAMATIC REDUCTION IN ENERGY
:A REQUIREMENTS IS INHERENT IN THIS SYSTEM.

:S WLKT (BRANDT)/GMJS/APPLICATION BEING PREPARED

**783 :T MOISTURIZING OF EXPANDED TOBACCO BY WATER SPRAY/7-18-77
:I R. DE LA BURDE, P. AUMENT, AND F. UTSCH
:C TOBACCO TREATMENT + MOISTENING
:D R&D/TOBACCO MATERIALS DEVELOPMENT DIVISION/TOBACCO PROCESSING
:D GANNON/BURNS

:A TOBACCO MATERIAL, WHICH HAS BEEN EXPANDED AND IS IN A VERY DRY
:A STATE, CAN BE REORDERED RAPIDLY AND WITHOUT LOSS OF BULK BY
:A SUBJECTION TO A FINE MIST WATER SPRAY, CHARACTERIZED BY DROPLET
:A SIZE BETWEEN 1 AND 120 MICRONS DIAMETER.

:S WLKT/GEI/2-14-78 DISCLOSURE SENT TO WLKT

**784 :T CONTROL OF MOISTURE IN TOBACCO DURING CIGARETTE MAKING
:T 7-25-77
:I J. OSMALOV
:C INSTRUMENT + MOISTURE METER
:D R&D/TOBACCO SERVICES DIVISION/GANNON/OSMALOV

:A A SYSTEM FOR USING THE OUTPUT OF THE BETA GAUGE IN COMBINATION
:A WITH THE READINGS OF MOISTURE CONTENT OF FILLER IN THE CIGARETTE
:A ROD TO CONTROL THE ADDITION OR REMOVAL OF MOISTURE IN THE
:A PNEUMATIC CONVEYING SYSTEM TO THE MAKER OR BY USING A HAUNI
:A VIBRO UNIT JUST AHEAD OF THE PNEUMATIC SYSTEM.

:S WLKT (DALEY)/GMJS/TESTING IN PROGRESS TO DEVELOP DATA NEEDED
;S FOR PATENT APPLICATION

**791 :T EXPANSION PROCESS FOR UNCURED TOBACCO/10-14-77
:I N. RAINER, G. BOKELMAN, AND J. HEARN
:C EXPANSION + OTHER CHEMICAL + HEAT + HLC
:D R&D/TOBACCO MATERIALS DEVELOPMENT DIVISION/MODIFIED SMOKING
:D MATERIALS/GANNON/BURNS

:A HOMOGENIZED GREEN TOBACCO LEAF AND/OR STEM ARE INCUBATED AT
:A ABOUT 40 DEGREES C FOR 20 HOURS IN THE PRESENCE OF A FLOW OF
:A AIR. THE HOMOGENIZED LEAF CURED (HEREINAFTER HLC) IS THEN
:A TREATED WITH AN ALKALINE HYDROGEN PEROXIDE SOLUTION FOLLOWED BY
:A WASHING. THE EXPANDED HLC IS ROASTED AT ABOUT 200 DEGREES C
:A TO ACHIEVE A 5% WEIGHT LOSS. THE RESULTANT HLC HAS A SIGNIFI-
:A CANTLY INCREASED FILLING CAPACITY, IMPROVED APPEARANCE, AND
:A SMOKING QUALITIES.

:S SAH/RELATED TO PM 797 AND 774; 11-77 SEARCH COMPLETED;
:S APPLICATION BEING PREPARED

**797 :T PROCESS FOR INCREASING THE FILLING POWER OF TOBACCO STEM MATERIAL
:T 10-28-77
:I N. RAINER AND J. HEARN
:C EXPANSION + OTHER CHEMICAL + HEAT
:D R&D/TOBACCO MATERIALS DEVELOPMENT DIVISION/MODIFIED SMOKING
:D MATERIALS/GANNON/BURNS

:A RKS TREATED WITH OZONE FOLLOWED BY TREATMENT WITH ALKALINE
:A HYDROGEN PEROXIDE TO EFFECT EXPANSION. STEMS ARE THEN ROASTED TO
:A OBTAIN 3 TO 75 WEIGHT LOSS.

:S SAH/RELATED TO PM 791 AND 774; SEARCH COMPLETED;
:S APPLICATION BEING PREPARED

1005115930

**798 :T METHOD FOR MEASURING FIRMNESS WHILE SMOKING OF CIGARETTE AND
:T LENGTH DURING SMOKING OF CIGARETTE/11-1-77
:I J. NIENOW, L. SHAW, AND C. IRVING
:C INSTRUMENT--FIRMNESS OF ROD
:D R&D/TOBACCO SERVICES DIVISION/CIGARETTE AND TOBACCO MEASUREMENT
:D METHODS/GANNON/OSMALOV

:A A METHOD FOR MEASURING FIRMNESS OF A CIGARETTE ROD DURING SMOKING
:A FOR DETERMINING EFFECTS OF INCREASED MOISTURE AND TEMPERATURE ON
:A FIRMNESS BEHIND THE COAL OF A BURNING CIGARETTE.

:S GMJS/APPLICATION BEING PREPARED

**804 :T DETECTORS FOR MILPRINT VACUUM EVAPORATED ALUMINUM FOIL/11-30-77
:I A. LILLY, F. WATSON, P. MARTIN, AND J. PRICE
:C INSTRUMENT + DETECTOR
:D R&D/MISCELLANEOUS/PHISICAL RESEARCH DIVISION/TOBACCO PHYSICS
:D FARONE/LOWITZ

:A METAL LAYERS OF EXTREME THINNESS, OF THE ORDER OF FIFTY
:A ANGSTROMS AND GREATER ARE DETECTED BY USE OF MICROWAVE ENERGY
:A SO PROPAGATED AS TO PERMIT DETERMINATION OF THE PRESENCE OR
:A ABSENCE OF THE METAL IN A DETECTION ZONE OF LIMITED EXTENT
:A OUTWARDLY OF THE ISSUANCE LOCATION OF SUCH PROPAGATED ENERGY.
:A APPARATUS IS PROVIDED FOR PROPAGATING MICROWAVE ENERGY HAVING A
:A CHARACTERISTIC WHICH CHANGES WITH PROPAGATION DISTANCE FROM A
:A MAXIMUM VALUE AT THE ENERGY ISSUANCE LOCATION TO A MINIMUM VALUE
:A FIRST EXHIBITED AT THE OUTWARD END OF THE DETECTION ZONE.

:S WLKT (DALEY)/GMJS/1-31-78 SECOND DRAFT RECEIVED

**810 :T NITRATE REMOVAL/12-19-77
:I B. SEMP AND D. TENG
:C MICROORGANISM + DENITRATION
:D R&D/BIOMATERIALS SCIENCE GROUP/GIOCHEMICAL MODIFICATION
:D OF TOBACCO/FARONE/TENG

:A A PROCESS FOR THE REDUCTION OF THE NITRATE CONTENT OF TOBACCO
:A BY MICROBIAL TREATMENT IS DISCLOSED. TOBACCO IS SUBJECTED,
:A UNDER CONTROLLED CONDITIONS, TO THE ACTION OF A MICROORGANISM
:A EFFECTIVE TO DEGRADE NITRATES THROUGH A BIOCHEMICAL REACTION IN
:A WHICH MOLECULAR NITROGEN IS ULTIMATELY FORMED. THE PROCESS IS
:A APPLICABLE FOR BOTH TOBACCO FILLER AND AQUEOUS TOBACCO EXTRACTS.
:A TOBACCO TREATED IN ACCORDANCE WITH THIS PROCESS, WHEN INCOR-
:A PORATED INTO A TOBACCO SMOKING PRODUCT, DELIVERS A SIGNIFICANTLY
:A REDUCED AMOUNT OF NITROGEN OXIDES.

:S SAH/CONSIDERED PRIORITY BY FARONE; APPLICATION BEING PREPARED

**811 :T METHOD AND APPARATUS FOR PERFORATING ARTICLES BY LASER/1-20-78
:I A. LILLY ET AL.
:C PAPER + PERFORATING
:D R&D/PHYSICAL RESEARCH DIVISION/TOBACCO PHYSICS/FARONE/LOWITZ
:A PERFORATIONS ARE MADE AT LOCATIONS SPACED ABOUT THE PERIPHERY
:A OF A CIGARETTE IN SINGLE ANGULAR DISPOSITION BY CONDUCTING
:A SEPARATE ANNULAR PARTS OF A RING-SHAPED LASER BEAM THROUGH
:A RESPECTIVE SEPARATE LIGHT PATHS WHICH INTERSECT SUCH SPACED
:A PERIPHERAL LOCATIONS.
:S WLKT (DALEY)/GMJS/1-20-78 DRAFT APPLICATION RECEIVED

**813 :T SYSTEM TO PERFORATE TIPPING PAPER WITH CO2 LASER/2-1-78
:I A. LILLY, JR., W. CLAFLIN, E. STULTZ, P. MARTIN, AND L. BROOKS
:C MECHANICAL
:D R&D/MISCELLANEOUS/PHYSICAL RESEARCH DIVISION/TOBACCO PHYSICS
:D FARONE/LOWITZ
:S WLKT (DALEY)/GMJS/1-27-78 DISCLOSURE SENT